Case Report

DOI: https://doi.org/10.18320/JIMD/201704.0372

Journal of International Medicine and Dentistry 2017; 4(3): 72-75

JOURNAL OF INTERNATIONAL MEDICINE AND DENTISTRY

To search.....to know.....to share

JIMD

p-ISSN: 2454-8847

e-ISSN: 2350-045X

Untying the Tongue Tie: A case report

Madhusudhan K S[1]

Abstract:

Ankyloglossia or tongue tie is a congenital condition that results when the inferior lingual frenulum is too short and is attached to the tip of the tongue, limiting its normal movements. Ankyloglossia can lead to a range of problems such as difficulties in breast feeding, speech impediments, poor oral hygiene, malocclusion, inability in deglutition, thus being an undesired problem in normal life activity. Various techniques like scalpel, laser and electro-surgery have been performed in treating tongue tie. Though each technique has got its own advantages and disadvantages, all are aimed at relieving the high muscle attachment to improve the movement of the tongue.

Key words: ankyloglossia, tongue tie, frenectomy, lingual frenulum

Introduction:

The tongue is an important organ that affects speech, position of the teeth, periodontal tissue, nutrition, and swallowing.[1] Tongue tie is the non-medical term for a relatively common physical condition that limits the normal function of the tongue, which is actually called as ankyloglossia.

Ankyloglossia is defined as a developmental anomaly of the tongue characterized by an abnormally short, thick lingual frenulum resulting in limitation of tongue movement [2] or in simple terms, tongue tie. Tongue-tie may lead to various functional abnormalities that include abnormal speech, mal-occlusion and inability to swallow the food which could entail difficulty in normal life activity of an individual. Etymologically, 'ankyloglossia' originates from the Greek words 'agkilos' (curved) and 'glossa' (tongue).[3] Ankyloglossia, or tongue-tie, can be observed in neonates, children or adults. This paper reports surgical management of ankyloglossia in a young male patient with surgical intervention using conventional scalpel method.

Case Report:

A 13-year old male patient reported to the department with the chief complaint of difficulty in moving his tongue freely which often causes speech difficulty in pronouncing certain words freely. On taking family history, there was no such case reported in the patient's family members and no relevant medical history. Intraoral examination revealed Ellis class II fracture of left maxillary central incisor and Angle's class I molar relationship with upper anterior proclination, lower anterior midline diastema (**Figure I**) and the restricted tongue movement due to the presence of fusion of lingual frenulum to the tongue with tongue protrusion measuring 3-7mm only. It was diagnosed as severe ankyloglossia (**Figure II**: Class III Kotlow's classification)[1]. A complete hemogram was done with all the values within normal limits.

After obtaining informed consent, the following procedure was carried out. After intraoral antisepsis with 0.12% chlorhexidine, topical anaesthetic was applied to the underside of the tongue following which bilateral lingual nerve block with 2% lignocaine and l: 80000 adrenaline was administered. Frenectomy was performed with scalpel using blade no. 15. Following the excision of the

muscle fibres, simple interrupted sutures were placed to close the surgically open site alongwith prescription of antibiotic regimen thrice a day and analgesic twice a day for five days. The sutures were removed 1 week following the day of surgery which showed excellent healing and the tongue movements were re-evaluated (**Figure III & IV**).

Figure I: Pre-operative view showing thick band of lingual frenulum

Figure II: Pre-operative view showing Class III ankyloglossia

Figure III: Improved tongue movement post-operatively

Figure IV: Four weeks post-surgical healing showing marked improvement in tongue protrusion

Discussion:

Ankyloglossia is a developmental anomaly characterized by an abnormally short lingual frenulum and attachment of the tongue to the floor of the mouth. The condition is the result of a failure in cellular degeneration leading to a much longer anchor between the floor of the mouth and the tongue.[4] The pathogenesis of ankyloglossia is unknown. Ankyloglossia can be a part of certain rare

Table I: Kotlow's classification based on free tongue

Classification of Ankyloglossia		Range of free tongue
Clinically acceptable, normal range of free tongue		>16mm
Class I	Mild ankyloglossia	12-16mm
Class II	Moderate ankyloglossia	8-11mm
Class III	Severe ankyloglossia	3-7mm
Class IV	Complete ankyloglossia	< 3mm

syndromes such as X-linked cleft palate (OMIM 303400)[5] and van der Woude syndrome (OMIM 119300),[6] Opitz syndrome[7] and Kindler syndrome.[8] Ankyloglossia is commonly seen as an isolated finding in an otherwise normal child.

The incidence of ankyloglossia in various reports ranges from 0.02% to as high as 4.8% of term newborns.[9] Several classifications have been proposed, but none have been universally accepted.[3] Ankyloglossia can be classified based on Kotlow's assessment (**Table I**).[1]

Choice of management for ankyloglossia includes timely and appropriate surgical intervention, followed by speech therapy which delivers pleasing results, often in a less time than expected. Surgical techniques for ankyloglossia can be classified into three procedures: (i) Simple cutting of the frenulum i.e. Frenotomy (ii) Complete excision of the whole frenulum i.e. frenectomy (iii) Frenuloplasty involves various methods to release the ankyloglossia and correct the anatomic situation. Surgical intervention for treating ankyloglossia includes conventional technique with scalpel, electrocautery[10] and LASER. Without post-operative exercise for tongue, there will be no convincing improvement in speech. It improves ability for sensation of parts of tongue (kinaesthesia) and rapid alternating movements of tongue (diadochokinesis).[2,11]

In our case, frenectomy using scalpel was planned, since surgical excision of the muscle fibres thus relieving the frenulum was simple, easier as well as less time consuming. The most expedient factor of electing scalpel over the other techniques was because of the fact that the complete excision of the lingual frenulum muscle fibres could be achieved. But caution should be taken while preferring scalpel in order to minimize the trauma to the adjacent vital structures. The outcome of the frenectomy in this case showed good healing without any post-operative complications.

Conclusion:

Tongue tie limits the functional ability and social embarrassment due to speech problem of the individual. Due to this condition, correction like combined surgical intervention and speech therapy is needed at the earliest

References:

1. Kotlow LA. Ankyloglossia (tongue-tie): A diagnostic and treatment quandary. Quintessence Intl 1999; 30:259-62.
2. Darshan HE, Pavithra PM. Tongue tie: From confusion to clarity-A review. Int J Dent Clin 2011; 3(1):48-51.
3. Suter VG and Bornstein MM. Ankyloglossia: Facts and Myths in Diagnosis and Treatment. J Periodontol 2009; 80:1204-1219; https://doi.org/10.1902/jop.2009.090086

4. Morowati S, Yasini M, Ranjbar R, Peivandi AA, and Ghadami M. Familial Ankyloglossia (Tongue-tie): A Case Report. Acta Med Iran 2010; 48:123-124.
5. Moore GE, Ivens A, Chambers J, Farrall M, Williamson R, Page DC, et al. Linkage of an X-chromosome cleft palate gene. Nature 1987; 326: 91-92; https://doi.org/10.1038/326091a0
6. Burdick AB, Ma LA, Dai ZH, Gao NN. van der Woude syndrome in two families in China. J Craniofac Genet Dev Biol 1987; 7: 413-418.
7. Brooks JK, Leonard CO, Coccaro PJ Jr. Opitz (BBB/G) syndrome: Oral manifestations. Am J Med Genet 1992;43:595-601; https://doi.org/10.1002/ajmg.1320430318
8. Hacham-Zadeh S, Garfunkel AA. Kindler syndrome in two related Kurdish families. Am J Med Genet 1985; 20: 43-8; https://doi.org/10.1002/ajmg.1320200107
9. Messner AH, Lalakea ML, Aby J, Macmahon J, Bair E. Ankyloglossia: Incidence and associated feeding difficulties. Arch Otolaryngol Head Neck Surg 2000; 126: 36-39.
10. Tuli A, Singh A. Monopolar diathermy used for the correction of ankyloglossia. J Indian Soc Pedod Prev Dent 2010; 28(2):130-3; https://doi.org/10.4103/0970-4388.66757
11. Bhattad MS, Baliga MS and Kriplani R Clinical guidelines and management of ankyloglossia with 1-year follow up: Report of 3 cases. Case Reports in Dentistry 2013; 2013: 185803; https://doi.org/10.1155/2013/185803

.

****

Conflict of interests: Nil
Source of funding: Nil

Authors details:

1. **Corresponding author:** Dr. Madhusudhan K S, Senior Lecturer, Department of Pedodontics and Preventive Dentistry, Krishnadevaraya College of Dental Sciences, Bangalore- 562157, Karnataka, India; E-mail: sudhannks@gmail.com